Claims

1. An optical switch comprising:

an incident side light transmitting member constructed by plural incident side optical fibers;

an emitting side light transmitting member constructed by plural emitting side optical fibers respectively arranged so as to be opposed to the respective incident side optical fibers;

at least one preliminary optical fiber functioning as one of the incident side optical fiber and the emitting side optical fiber;

reflection means moved so as to be positioned with respect to one of the optical fibers and able to transmit an optical signal between the preliminary optical fiber and the other optical fibers by reflecting the optical signal; and

driving means for moving the reflection means so as to be able to position the reflection means with respect to one of the optical fibers.

2. An optical switch comprising:

plural incident side optical fibers;

plural main emitting side optical fibers respectively arranged so as to be opposed to the respective incident side optical fibers, and a single preliminary emitting side optical fiber;

reflection means for reflecting an optical signal from one of the incident side optical fibers to the preliminary emitting side optical fiber; and

driving means for moving the reflection means with respect to one of the respective incident side optical fibers.

3. An optical switch comprising:

plural main incident side optical fibers and a single preliminary incident side optical fiber;

plural emitting side optical fibers respectively arranged so as to be opposed to the respective main incident side optical fibers;

reflection means for reflecting an optical signal from the preliminary incident side optical fiber to one of the emitting side optical fibers; and

driving means for moving the reflection means with respect to one of the respective emitting side optical fibers.

4. An optical switch comprising:

plural main incident side optical fibers and a single preliminary incident side optical fiber;

plural main emitting side optical fibers respectively arranged so as to be opposed to said respective main incident side optical fibers, and a single preliminary emitting side optical fiber arranged so as to be opposed to said preliminary incident side optical fiber;

reflection means moved so as to be positioned with

respect to one of the optical fibers, and able to transmit an optical signal between the preliminary optical fibers and the other optical fibers by reflecting the optical signal; and

driving means for moving the reflection means so as to be able to position the reflection means with respect to one of the optical fibers.

5. An optical switch characterized in that an incident side light transmitting member constructed by plural incident side optical fibers, an emitting side light transmitting member constructed by plural emitting side optical fibers, and at least one preliminary optical fiber functioning as one of the incident side optical fiber and the emitting side optical fiber are arranged in parallel and integrated;

an optical signal from each incident side optical fiber is reflected by fixture reflection means and is transmitted to each corresponding emitting side optical fiber; and

the optical signal can be transmitted between the preliminary optical fiber and the other optical fibers by reflecting the optical signal by movable reflection means movable through driving means so as to be positioned with respect to one of the optical fibers.

6. An optical switch characterized in that plural incident side optical fibers, plural main emitting side optical fibers and a single preliminary emitting side optical fiber are arranged in parallel and are integrated;

an optical signal from each incident side optical fiber is reflected by fixture reflection means and is transmitted to each corresponding main emitting side optical fiber; and

the optical signal is reflected by movable reflection means movable through driving means so as to be positioned with respect to one of the optical fibers, and can be transmitted between the incident side optical fiber and the preliminary emitting optical fiber.

7. An optical switch characterized in that plural main incident side optical fibers, a single preliminary incident side optical fiber and plural emitting side optical fibers are arranged in parallel and are integrated;

an optical signal from each main incident side optical fiber is reflected by fixture reflection means and is transmitted to each corresponding emitting side optical fiber; and

the optical signal is reflected by movable reflection means movable through driving means so as to be positioned with respect to one of the optical fibers, and can be transmitted between the preliminary incident side optical fiber and the emitting side optical fiber.

8. An optical switch characterized in that plural main incident side optical fibers, a single preliminary incident side optical fiber, plural main emitting side optical fibers and a single preliminary emitting side optical fiber are

arranged in parallel and are integrated,

an optical signal from each main incident side optical fiber is reflected by fixture reflection means and is transmitted to each corresponding main emitting side optical fiber,

the optical signal is reflected by movable reflection means movable through driving means so as to be positioned with respect to one of the optical fibers, and can be transmitted between the preliminary incident side optical fiber and the main emitting side optical fiber, or between the preliminary emitting side optical fiber and the main incident side optical fiber.

9. The optical switch according to any one of claims 1 to 8, wherein said driving means can escape the reflection means until a position for interrupting no optical path between the incident side optical fiber and the emitting side optical fiber in moving the reflection means.

10. The optical switch according to any one of claims 1 to 9, wherein said driving means is constructed by a stepping motor or a voice coil motor.

11. The optical switch according to any one of claims 1 to 10, wherein a lens array for integrating said optical fibers and having a collimator lens for setting light emitted or incident to each optical fiber to parallel light is arranged.

12. The optical switch according to any one of claims

1 to 11, wherein said reflection means and said preliminary emitting side optical fiber can be integrally moved.

13. The optical switch according to any one of claims 1 to 12, wherein said reflection means is constructed by a reflection face formed by press working in one end portion of a bar material manufactured by a metal, press working in one end portion of a bar material manufactured by glass, or injection molding processing.

14. An optical switch unit characterized in that the optical switch according to any one of claims 1 to 13 and control means for controlling the operation of said driving means are stored into a single casing.